STATE OF MISSOURI

DEPARTMENT OF NATURAL RESOURCES

MISSOURI CLEAN WATER COMMISSION

MISSOURI STATE OPERATING PERMIT

In compliance with the Missouri Clean Water Law, (Chapter 644 R.S. Mo. as amended, hereinafter, the Law), and the Federal Water Pollution Control Act (Public Law 92-500, 92nd Congress) as amended,

Permit No.	MO-0113671
Owner:	Don Critten
Address:	28100 Quick Avenue, Gallatin, MO 64640
Continuing Authority:	Same as above
Address:	Same as above
Facility Name:	Landmark Manufacturing Corporation
Address:	28100 Quick Avenue, Gallatin, MO 64640
Legal Description:	See page 2
Receiving Stream:	Tributary to Big Muddy Creek (U)
First Classified Stream and ID:	Big Muddy Creek (P)(00436) 303(d) list
USGS Basin & Sub-watershed No.:	(10280101-180003)

is authorized to discharge from the facility described herein, in accordance with the effluent limitations and monitoring requirements as set forth herein:

FACILITY DESCRIPTION

See page 2

This permit authorizes only wastewater discharges under the Missouri Clean Water Law and the National Pollutant Discharge Elimination System; it does not apply to other regulated areas. This permit may be appealed in accordance with Section 644.051.6 of the Law.

January 24, 2003
Effective Date

Stephen M. Mahfood, Director, Department of Natural Resources
Executive Secretary, Clean Water Commission

January 23, 2008
Expiration Date

Jim Hull, Director of Staff, Clean Water Commission

FACILITY DESCRIPTION (continued)

Outfall #001 – Sanitary Wastwater/Stormwater Runoff - SIC #4952/3465
Single cell holding lagoon/spray irrigation/sludge is retained in lagoon.
Design population equivalent is 280.
Design flow is 5,435 gallons per day.
Actual flow is 5,435 gallons per day.
Design sludge production is 2.5 dry tons/year.
Legal Description: NW ¼, SW ¼, Sec. 30, T59N, R26W, Daviess County

Outfall #002 – Industry/Metal Fabrication/Stormwater Runoff – SIC #34952/465
Recycle pond/spray irrigation/sludge is retained in lagoon.
Design flow for irrigation is 1,102 gallons per day.
Recycle pond receives cooling water, process wash water and storm water runoff.
Flows that exceed recycle needs will be irrigated.
Design recycle flow is 53,700 gallons per day.
Legal Description: NW ¼, SW ¼, Sec. 30, T59N, R26W, Daviess County

Outfall #003
Excess roof drain run-off that is not treated by the treatment facility, and run-off from irrigation fields and other vegetated areas in the plant area as well as equipment storage.
The discharge does not include process water, as wastewater is not land-applied during run-off periods.
Design flow is 50,000 gpd.
Legal Description: NE ¼, SE ¼, Sec. 25, T59N, R27W, Daviess County

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective upon issuance and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:

OUTFALL NUMBER AND EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
Outfalls #001 & #002 – Lagoon & Recycle Pond Emergency Discharge (Note 1)						
Flow	MGD	*		*	once/day	grab
Biochemical Oxygen Demand$_5$	mg/L		65	45	once/day	grab
Total Suspended Solids	mg/L		110	70	once/day	grab
Oil & Grease	mg/L	10		10	once/day	grab
pH – Units	SU	***		***	once/day	grab
Outfalls #001 & #002 – Irrigated Wastewater (Note 2)						
Biochemical Oxygen Demand$_5$	mg/L	*		*	once/quarter**	grab
Total Suspended Solids	mg/L	*		*	once/quarter**	grab
pH – Units	SU	***		***	once/quarter**	grab
Nitrate/Nitrite as N	mg/L	*		10	once/quarter**	grab
Ammonia as N	mg/L	27		27	once/quarter**	grab
Aluminum	mg/L	0.75		0.75	once/quarter**	grab
Cadmium	mg/L	0.068		0.068	once/quarter**	grab
Chromium	mg/L	*		0.2	once/quarter**	grab
Copper	mg/L	0.064		0.064	once/quarter**	grab
Iron	mg/L	1.4		1.4	once/quarter**	grab
Lead	mg/L	0.2		0.2	once/quarter**	grab
Nickel	mg/L	*		0.5	once/quarter**	grab
Chlorides	mg/L	*		250	once/quarter**	grab
Sulfates	mg/L	*		250	once/quarter**	grab
Oil & Grease	mg/L	10		10	once/quarter**	grab

MONITORING REPORTS SHALL BE SUBMITTED QUARTERLY; THE FIRST REPORT IS DUE April 28, 2003. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.

B. STANDARD CONDITIONS

IN ADDITION TO SPECIFIED CONDITIONS STATED HEREIN, THIS PERMIT IS SUBJECT TO THE ATTACHED Parts I & III STANDARD CONDITIONS DATED October 1, 1980 and August 15, 1994, AND HEREBY INCORPORATED AS THOUGH FULLY SET FORTH HEREIN.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective upon issuance and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:

OUTFALL NUMBER AND EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
Outfalls #001 & #002						
Whole Effluent Toxicity (WET) Test	% Survival		See Special Conditions		once/year	grab
Acetone	mg/L	*		0.2	once/year	grab
Total Toxic Organics	mg/L	*		*	once/5 years	grab
MONITORING REPORTS SHALL BE SUBMITTED ANNUALLY; THE FIRST REPORT IS DUE October 28, 2003.						
Land Application System (Note 4)						
Lagoon Freeboard	feet	*			once/month	grab
Irrigation Period	hours	*			once/day	total
Volume Irrigated	gallons	*			once/day	total
Application Area	acres	*			once/day	total
Application Rate	inches/ acre	*			once/day	total
Rainfall	inches	*			once/day	total
MONITORING REPORTS SHALL BE SUBMITTED ANNUALLY; THE FIRST REPORT IS DUE January 28, 2004.						
Outfall #003						
Flow	MGD	*		*	Note 3	grab
Total Suspended Solids	mg/L		110	70	Note 3	grab
Oil & Grease	mg/L	10		10	Note 3	grab
pH – Units	SU	***		***	Note 3	grab
MONITORING REPORTS SHALL BE SUBMITTED QUARTERLY; THE FIRST REPORT IS DUE April 28, 2003. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						

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A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (continued)

* Monitoring requirement only.
** Sample once per quarter in the months of March, June, September & December.
*** pH is measured in pH units and is not to be averaged. The pH is limited to the range of 6.0-9.0 pH units.

Note 1 – There shall be no discharge during normal operation. A short-term discharge may occur when excess wastewater has accumulated above feasible irrigation rates due to precipitation exceeding the 10-year 365 day rainfall or the 25-year 24-hour rainfall.

Note 2 – Wastewater that is irrigated shall be sampled at the irrigation pump or wet well.

Note 3 – Outfall #003 will be sampled once annually during the first hour after a discharge from a rainfall event greater than 0.1 inch in a 24 hour period. Report as "no-discharge" if a discharge does not occur during the monitoring period. Samples shall be collected at the property boundary.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (continued)

Note 4 – Records shall be maintained and summarized into an annual operating report which shall be submitted by January 28th of each year for the previous calendar year period. The report shall include the following:

(a) record of maintenance and repairs performed during the year, average number of times per month the facility is checked to see if it is operating properly, and description of any unusual operating conditions encountered during the year;
(b) the number of days the lagoon has discharged during the year, the discharge flow, the reasons discharge occurred and effluent analysis performed; and
(c) a summary of the irrigation operations including freeboard at the start and end of the irrigation season, the number of days of irrigation for each month, the total gallons irrigated, the total acres used, the application rate in inches/acre for the year and the total precipitation received at the facility.

C. SPECIAL CONDITIONS

1. Report as no-discharge when a discharge does not occur during the report period.

2. Special Conditions for Wastewater Irrigation

(a) Wastewater Irrigation System.

1. System Design and Application Rates.
   (a) There shall be design capacity for at least 120 days storage for wastewater flows, plus the one in ten year rainfall minus evaporation and the 25-year 24-hour rainfall.
   (b) Irrigation rates per acre shall not exceed 0.2 inch/hour, 0.5 inch/day, 1.0 inch/week and 12 inches/year on the irrigation sites.
   (c) The wastewater irrigation site(s) shall be at least 10 acres.
   (d) The vegetation grown on the irrigation site shall be grass.
   (e) Wastewater shall not be applied to field slopes greater than 12%.
   (f) The wastewater irrigation system shall be capable of irrigating the annual design flow during an application period of less than 100 days or 800 hours per year.
   (g) There shall be no public access to the land application site.

2. Buffer Zones. There shall be no irrigation within 300 feet of any downgradient pond, lake, sinkhole, or losing stream; 100 feet of gaining streams or tributaries including wet weather tributaries; 150 feet of dwelling; or 50 feet of the property line.

3. General Operating Requirements.
   (a) There shall be no irrigation during frozen, snow covered, or saturated soil conditions.
   (b) There shall be no irrigation on days when more than 0.1 inch of precipitation is received or when there is a weather forecast for more than 40 percent chance of rainfall within the next 24-hours.
   (c) The wastewater irrigation system shall be operated so as to provide uniform distribution of irrigated wastewater over the entire irrigation site.
   (d) A complete ground cover of vegetation shall be maintained on the irrigation site.
   (e) Wastewater shall be land applied only during daylight hours.
   (f) The irrigation system and application site shall be visually inspected at least once per hour during wastewater irrigation.
   (g) The irrigation system shall have automatic shut off device to shut down the system due to malfunction.

C. SPECIAL CONDITIONS (continued)

2. Special Conditions for Wastewater Irrigation (continued)

4. Any discharge from the lagoon or irrigation system shall be reported to the department within 24 hours.

5. The operator and supervisor shall receive at least 12 hours/year of training in wastewater irrigation.

6. Storm water runoff locations from the irrigation sites must be marked in field and on a topographic map. The map shall be submitted to the department within 30 days after permit issuance.

3. The permittee shall immediately notify the Director as soon as he knows or has reason to believe that any changes in the industrial wastewater characteristics have occurred or that a previously unknown constituent in the wastewater has been identified.

4. Industrial Sludge Disposal

(a) Disposal of industrial sludge is not authorized by this permit. Industrial sludge shall be disposed at a permitted solid waste disposal facility in accordance with 10 CSR 80; or if the sludge is determined to be hazardous waste, shall be disposed at a permitted hazardous waste disposal facility pursuant to 10 CSR 25.

(b) Non-hazardous sludge that is disposed on site or that is exempted under 10 CSR 80 must obtain applicable permits under 10 CSR 20-6.015 and 10 CSR 20-6.200.

(c) Each effluent monitoring report shall also specify the date any sludge is removed from the facility, who removed the sludge and the number of gallons or quantity of sludge removed. The final disposal location shall be reported, including the name of the disposal facility, the solid waste or hazardous waste disposal permit number, and date of permit issuance.

(d) This permit may (after due process) be modified, or alternatively revoked and reissued, to comply with any applicable sludge disposal standard or limitation issued or approved under Section 405(d) of the Clean Water Act.

5. This permit may be reopened and modified, or alternatively revoked and reissued, to:
(a) Comply with any applicable effluent standard or limitation issued or approved under Sections 301(b)(2)(C) and (D), 304(b)(2), and 307(a) (2) of the Clean Water Act, if the effluent standard or limitation so issued or approved:
(1) contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or
(2) controls any pollutant not limited in the permit.
(b) Incorporate new or modified effluent limitations or other conditions, if the result of a waste load allocation study, toxicity test or other information indicates changes are necessary to assure compliance with Missouri’s Water Quality Standards.
(c) Incorporate new or modified effluent limitations or other conditions if, as the result of a watershed analysis, a Total Maximum Daily Load (TMDL) limitation is developed for the receiving waters which are currently included in Missouri’s list of waters of the state not fully achieving the state’s water quality standards, also called the 303(d) list.
The permit as modified or reissued under this paragraph shall also contain any other requirements of the Clean Water Act then applicable.

6. All outfalls must be clearly marked in the field.

C. SPECIAL CONDITIONS (continued)

7. Permittee will cease discharge by connection to areawide wastewater treatment system within 90 days of notice of its availability.

8. Changes in Discharges of Toxic Substances

The permittee shall notify the Director as soon as it knows or has reason to believe:
(a) That any activity has occurred or will occur which would result in the discharge of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels:"
    (1) One hundred micrograms per liter (100 µg/L);
    (2) Two hundred micrograms per liter (200 µg/L) for acrolein and acrylonitrile; five hundred micrograms per liter (500 µg/L) for 2,5 dinitrophenol and for 2-methyl-4, 6-dinitrophenol; and one milligram per liter (1 mg/L) for antimony;
    (3) Five (5) times the maximum concentration value reported for the pollutant in the permit application;
    (4) The level established in Part A of the permit by the Director.
(b) That they have begun or expect to begin to use or manufacture as an intermediate or final product or byproduct any toxic pollutant, which was not reported in the permit application.

9. General Criteria. The following water quality criteria shall be applicable to all waters of the state at all times including mixing zones. No water contaminant, by itself or in combination with other substances, shall prevent the waters of the state from meeting the following conditions:
(a) Waters shall be free from substances in sufficient amounts to cause the formation of putrescent, unsightly or harmful bottom deposits or prevent full maintenance of beneficial uses;
(b) Waters shall be free from oil, scum and floating debris in sufficient amounts to be unsightly or prevent full maintenance of beneficial uses;
(c) Waters shall be free from substances in sufficient amounts to cause unsightly color or turbidity, offensive odor or prevent full maintenance of beneficial uses;
(d) Waters shall be free from substances or conditions in sufficient amounts to result in toxicity to human, animal or aquatic life;
(e) There shall be no significant human health hazard from incidental contact with the water;
(f) There shall be no acute toxicity to livestock or wildlife watering;
(g) Waters shall be free from physical, chemical or hydrologic changes that would impair the natural biological community;
(h) Waters shall be free from used tires, car bodies, appliances, demolition debris, used vehicles or equipment and solid waste as defined in Missouri's Solid Waste Law, section 260.200, RSMo, except as the use of such materials is specifically permitted pursuant to section 260.200-260.247.

10. Sludge and Biosolids Use For Domestic Wastewater Treatment Facilities
(a) Permittee shall comply with the pollutant limitations, monitoring, reporting, and other requirements in accordance with the attached permit Standard Conditions.
(b) If sludge is not removed by a contract hauler, permittee is authorized to land apply biosolids. Permit Standard Conditions, Part III shall apply to the land application of biosolids. Permittee shall notify the department at least 180 days prior to the planned removal of biosolids. The department may require submittal of a biosolids management plan for department review and approval as determined appropriate on a case-by-case basis.

C. SPECIAL CONDITIONS (continued)

11. Whole Effluent Toxicity (WET) tests shall be conducted as follows:

SUMMARY OF WET TESTING FOR THIS PERMIT				
OUTFALL	A.E.C. %	FREQUENCY	SAMPLE TYPE	MONTH
#001 & #002	100%	Annually	grab	*

*The test shall be performed during the first irrigation period in each calendar year.

a. Test Schedule and Follow-Up Requirements

(1) Perform a single-dilution test in the months and at the frequency specified above.

If the effluent passes the test, do not repeat the test until the next test period. Submit results with the annual report.
If the effluent fails the test, a multiple dilution test shall be performed within 30 days, and biweekly thereafter, until one of the following conditions are met:

(a) THREE CONSECUTIVE MULTIPLE-DILUTION TESTS PASS. No further tests need to be performed until next regularly scheduled test period.
(b) A TOTAL OF THREE MULTIPLE-DILUTION TESTS FAIL.

(2) The permittee shall submit a summary of all test results for the test series to the WPCP, Planning Section, P.O. Box 176, Jefferson City, MO 65102 within 14 days of the third failed test. DNR will contact the permittee with initial guidance on conducting a toxicity identification evaluation (TIE) or toxicity reduction evaluation (TRE). The permittee shall submit a plan for conducting a TIE or TRE to the Planning Section of the WPCP within 60 days of the date of DNR's letter. This plan must be approved by DNR before the TIE or TRE is begun. A schedule for completing the TIE or TRE shall be established in the plan approval.

(3) Upon DNR's approval, the TIE/TRE schedule may be modified if toxicity is intermittent during the TIE/TRE investigations. A revised WET test schedule may be established by DNR for this period.

(4) If a previously completed TIE has clearly identified the cause of toxicity, additional TIEs will not be required as long as effluent characteristics remain essentially unchanged and the permittee is proceeding according to a DNR approved schedule to complete a TRE and reduce toxicity. Regularly scheduled WET testing as required in the permit, without the follow-up requirements, will be required during this period.

(5) In addition to the WET test summary report required in part (2), all failing test results shall be reported to DNR within 14 days of the availability of the results.

(6) All WET test results for the reporting period shall be summarized and submitted to DNR by the end of the following October. When WET test sampling is required to run over one DMR period, each DMR report shall contain information generated during the reporting period.

C. SPECIAL CONDITIONS (continued)

11. Whole Effluent Toxicity (WET) (continued)

b. PASS/FAIL procedure and effluent limitations

(1) To pass a single-dilution test, mortality observed in the AEC test concentration shall not be significantly different (at the 95% confidence level; p = 0.05) than that observed in the upstream receiving-water control sample. The appropriate statistical tests of significance will be those outlined in the most current USEPA acute toxicity manual or those specified by the MDNR.

(2) To pass a multiple-dilution test:

(a) the computed percent effluent at the edge of the zone of initial dilution, Acceptable Effluent Concentration (AEC), must be less than three-tenths (0.3) of the LC_{50} concentration for the most sensitive of the test organisms; or,
(b) all dilutions equal to or greater than the AEC must be nontoxic. Failure of one multiple-dilution test is an effluent limit violation.

c. Test Conditions

(1) Test species: Ceriodaphnia dubia and Pimephales promelas (fathead minnow). Organisms used in WET testing should come from cultures reared for the purpose of conducting toxicity tests and should be cultured in a manner consistent with the most current USEPA guidelines. All test animals should be cultured as described in EPA-600/4-90/027.

(2) Test period: 48 hours at the "Acceptable Effluent Concentration" (AEC) specified above.

(3) When dilutions are required, upstream receiving stream water shall be used as dilution water. If upstream water is unavailable or if mortality in the upstream water exceeds 10%, "reconstituted" water will be used as dilution water. Procedures for generating reconstituted water will be supplied by the MDNR upon request.

(4) Tests should be initiated immediately after the sample is collected, but tests must be initiated no later than 36 hours after sample collection.

(5) Single-dilution tests will be run with:

(a) Effluent at the AEC concentration;
(b) 100% receiving-stream water (if available), collected upstream of the outfall at a point beyond any influence of the effluent; and
(c) reconstituted water.

(6) Multiple-dilution tests will be run with:

(a) 100%, 50%, 25%, 12.5%, and 6.25% effluent, unless the AEC is less than 25% effluent, in which case dilutions will be 4 times the AEC, two times the AEC, AEC, 1/2 AEC and 1/4 AEC;
(b) 100% receiving-stream water (if available), collected upstream of the outfall at a point beyond any influence of the effluent; and
(c) reconstituted water.

(7) If reconstituted-water control mortality for a test species exceeds 10%, the entire test will be rerun.

SUMMARY OF TEST METHODOLOGY FOR WHOLE-EFFLUENT TOXICITY TESTS

Whole-effluent-toxicity test required in NPDES permits shall use the following test conditions when performing single or multiple dilution methods. Any future changes in methodology will be supplied to the permittee by the Missouri Department of Natural Resources (MDNR). Unless otherwise specified by MDNR, procedures should be consistent with Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, EPA/600/4-90/027.

Test conditions for Ceriodaphnia dubia:

Test duration:	48 h
Temperature:	25 ± 2°C
Light Quality:	Ambient laboratory illumination
Photoperiod:	16 h light, 8 h dark
Size of test vessel:	30 mL (minimum)
Volume of test solution:	15 mL (minimum)
Age of test organisms:	<24 h old
No. of animals/test vessel:	5
No. of replicates/concentration:	4
No. of organisms/concentration:	20 (minimum)
Feeding regime:	None (feed prior to test)
Aeration:	None
Dilution water:	Upstream receiving water; if no upstream flow, synthetic water modified to reflect effluent hardness.
Endpoint:	Mortality (Statistically significant difference from upstream receiving water control at $p \leq 0.05$)
Test acceptability criterion:	90% or greater survival in controls

Test conditions for (Pimephales promelas):

Test duration:	48 h
Temperature:	25 ± 2°C
Light Quality:	Ambient laboratory illumination
Photoperiod:	16 h light/ 8 h dark
Size of test vessel:	250 mL (minimum)
Volume of test solution:	200 mL (minimum)
Age of test organisms:	1-14 days (all same age)
No. of animals/test vessel:	10
No. of replicates/concentration:	4 (minimum) single dilution method 2 (minimum) multiple dilution method
No. of organisms/concentration:	40 (minimum) single dilution method 20 (minimum) multiple dilution method
Feeding regime:	None (feed prior to test)
Aeration:	None, unless DO concentration falls below 4.0 mg/L; rate should not exceed 100 bubbles/min.
Dilution water:	Upstream receiving water; if no upstream flow, synthetic water modified to reflect effluent hardness.
Endpoint:	Mortality (Statistically significant difference from upstream receiving water control at $p \leq 0.05$)
Test Acceptability criterion:	90% or greater survival in controls